

CLAIMS:

1. A device for restraining a passenger in a vehicle seat comprising a back portion and a seat portion which define a bight therebetween, the device comprising:

5 a portable booster seat,

a mounting assembly coupled to the booster seat and configured to mount the booster seat to the vehicle seat with the booster seat positioned on the seat portion, and

10 a restraint assembly coupled to the booster seat and to the mounting assembly, the restraint assembly configured to restrain a passenger positioned on the portable booster seat.

2. The device of claim 1 wherein the mounting assembly comprises one or more webs configured to mount the booster seat to the vehicle seat.

3. The device of claim 2 wherein the one or more webs are
15 configured to wrap around at least a portion of the back portion of the vehicle seat.

4. The device of claim 3 wherein at least one of the one or more webs has a first connector configured to engage a first anchorage attached to the vehicle.

20 5. The device of claim 4 wherein the first anchorage comprises an upper tether anchorage attached to the vehicle.

6. The device of claim 4 wherein the first anchorage comprises an anchorage attached to the vehicle seat.

7. The device of claim 6 wherein the first anchorage is disposed in the
25 bight of the vehicle seat.

8. The device of claim 7 wherein at least one of the one or more webs has a second connector configured to engage a second anchorage attached to the vehicle.

9. The device of claim 8 wherein the second anchorage is disposed in
30 the bight of the vehicle seat.

10. The device of claim 9 wherein at least one of the one or more webs has a third connector configured to engage a third anchorage attached to the vehicle.

5 11. The device of claim 10 wherein the third anchorage comprises an upper tether anchorage.

12. The device of claim 8 wherein the second anchorage comprises an upper tether anchorage.

10 13. The device of claim 4 wherein the booster seat further comprises a second connector attached thereto and configured to engage the first anchorage.

14. The device of claim 13 wherein the booster seat further comprises a second connector attached thereto and configured to engage a second anchorage attached to the vehicle.

15 15. The device of claim 13 wherein the booster seat further comprises one or more appendages forming one or more belt receiving channel, wherein the vehicle has an integral seat belt system and the one or more belt receiving channels is configured to receive therethrough one or more belts of the integral seat belt system.

20 16. The device of claim 4 wherein the booster seat further comprises second and third connectors attached thereto and configured to engage respective second and third anchorages attached to the vehicle, and wherein the first anchorage comprises an upper tether anchorage.

25 17. The device of claim 16 wherein the booster seat further comprises one or more appendages forming one or more belt receiving channel, wherein the vehicle has an integral seat belt system and the one or more belt receiving channels is configured to receive therethrough one or more belts of the integral seat belt system.

30 18. The device of claim 4 wherein the booster seat further comprises one or more appendages forming one or more belt receiving channel, wherein the vehicle has an integral seat belt system and the one or more belt receiving channels is configured to receive therethrough one or more belts of the integral seat belt system.

19. The device of claim 1 wherein the booster seat further comprises a first connector attached thereto and configured to engage a first anchorage attached to the vehicle.

5 20. The device of claim 19 wherein the booster seat further comprises one or more appendages forming one or more belt receiving channel, wherein the vehicle has an integral seat belt system and the one or more belt receiving channels is configured to receive therethrough one or more belts of the integral seat belt system.

10 21. The device of any of the preceding claims wherein the restraint assembly comprises a five-point restraint system.

22. The device of any of the preceding claims wherein the restraint assembly comprises a four-point restraint system.

23. The device of claim 21 wherein the restraint assembly further comprises a chest strap.

15 24. The device of claim 23 wherein the restraint assembly further comprises a torso support assembly.

25. The device of claim 24 wherein the restraint assembly further comprises a lateral support assembly.

20 26. The device of claim 21 wherein the restraint assembly further comprises a lateral support assembly.

27. The device of claims 25 and 26 wherein the lateral support assembly comprises a pair of movable wings.

25 28. The device of claim 27 wherein the wings may be positioned as desired without actuating a release mechanism and may be retained in the desired position without engaging a locking mechanism.

29. The device of any of the preceding claims wherein the restraint assembly includes a height adjuster.

30 30. The device of claim 2 wherein the mounting assembly further comprises a positioning member configured to receive therethrough the one or more mounting webs.

31. The device of claim 30 wherein the positioning member is coupled to the back portion.

32. The device of any of the preceding claims further comprising two or more booster seats and their associated mounting assemblies and restraint assemblies.

5 33. The device of claim 32 wherein the two or more booster seats are rigidly connected when mounted to the vehicle seat.

34. The device of any of the preceding claims further comprising a cover configured to enclose at least a portion of the mounting assembly.

10 35. A device for restraining a passenger in a vehicle seat comprising a back portion and a seat portion which define a bight therebetween, the device comprising:

a portable booster seat having one or more connectors attached thereto and configured to engage one or more anchorages attached to the vehicle,

15 a mounting assembly coupled to the booster seat and having one or more webs configured to wrap around at least a portion of the back portion to mount the device to the vehicle seat, and

a five-point restraint assembly coupled to the booster seat and configured to restrain a passenger positioned on the portable booster seat.

20 36. A method of mounting an occupant restraint system to a vehicle seat comprising a back portion having a front and back surface and a seat portion having a top and bottom surface, with the back and seat portions defining a bight therebetween, the method comprising the steps of:

passing a first opposing end of a web over at least a portion of the top of the vehicle seat and down at least a portion of the front surface of the back portion,

25 passing a second end of a web over the top of the vehicle seat and down at least a portion of the back surface of the back portion and through the bight toward the front surface,

30 placing a booster seat on a portion of the top surface of the seat portion, attaching the first opposing end of the web to the booster seat, and attaching the second opposing end of the web to the booster seat.

37. The method of claim 36 further comprising the step of attaching a passenger restraint system to the booster seat.

38. The method of claim 36 further comprising the step of attaching a cover over at least a portion of the passenger restraint system.

39. The method of claim 36 further comprising the step of attaching a lateral support assembly to the passenger restraint system.

5 40. The method of claim 36 further comprising the step of engaging a first connector attached to the booster seat with an anchorage attached to the vehicle.

41. The method of claim 40 further comprising the step of routing through a belt receiving channel formed on the booster seat a belt from a vehicle
10 restraint system integral to the vehicle.

42. A method of mounting an occupant restraint system to a vehicle seat comprising a back portion having a front and back surface and a seat portion having a top and bottom surface, with the back and seat portions defining a bight therebetween, the method comprising the steps of:

15 placing a booster seat on a portion of the top surface of the seat portion, and

engaging a connector attached to the booster seat to an anchorage located in the bight of the seat.

43. The method of claim 42 further comprising the steps of
20 passing a first opposing end of a web over the top of the vehicle seat and down at least a portion of the front surface of the back portion;

passing a second end of a web over the at least a portion of the top of the vehicle seat;

attaching the first opposing end of the web to the booster seat;

25 attaching the second opposing end of the web to an anchorage attached to the vehicle.

44. The method of any of the previous claims further including the step of routing the mounting web through a positioning member.

45. The method of any of the previous claims further including the step
30 of positioning an occupant on the booster seat and engaging the restraint assembly about the occupant.

46. The device of any of the preceding claims wherein the device complies with all FMVSS standards extant as of October 1, 2004.

47. A restraint system for restraining a passenger in a vehicle seat having a seat portion and a back portion defining a bight therebetween, the
5 restraint system comprising:

a portable seat base configured to be positioned on the seat portion of the vehicle seat and to support the passenger in a seated position thereon,

a mounting assembly coupled to the seat base and configured to mount to the vehicle seat, and

10 a restraint assembly coupled to the seat base and to the mounting assembly, the restraint assembly configured to restrain the passenger positioned on the seat base.

48. The restraint system of claim 47 wherein the mounting assembly is configured to wrap around the back portion of the vehicle seat.

15 49. The restraint system of claim 48 wherein the seat portion of the vehicle seat defines a rear portion adjacent to the bight and a front portion extending forwardly away from the bight,

and wherein the mounting system is further configured to extend under the seat portion from the rear portion toward the front portion thereof and then
20 upwardly into engagement with the seat base.

50. The restraint system of claim 47 wherein the back portion of the vehicle seat defines a bottom portion adjacent to the bight and a top portion extending upwardly away from the bottom portion,

and wherein the mounting assembly is configured to extend over the top
25 portion of the back portion of the vehicle seat and into engagement with an anchorage member.

51. The restraint system of claim 50 wherein the anchorage member is mounted to a vehicle carrying the vehicle seat and the restraint system.

52. The restraint system of claim 50 wherein the back portion of the
30 vehicle seat defines a front adjacent to the seat portion and a back,
and wherein the anchorage member is mounted to the back of the back portion.

53. The restraint system of claim 47 wherein the mounting assembly is mounted to at least one anchorage disposed in the bight of the vehicle seat.

54. The restraint system of claim 47 wherein the restraint assembly is a multiple-point restraint harness.

5 55. The restraint system of claim 47 further including a plurality of seat bases coupled to the mounting assembly, each of the plurality of seat bases having a separate restraint assembly coupled thereto and to the mounting assembly, each the separate restraint assemblies configured to restrain a different passenger positioned on the corresponding seat base.